

117TH CONGRESS
1ST SESSION

S. 1213

To require the Secretary of Commerce to seek to enter into an agreement with the National Academies of Sciences, Engineering, and Medicine to conduct a study on the top 10 emerging science and technology challenges faced by the United States and develop recommendations to address them, and for other purposes.

IN THE SENATE OF THE UNITED STATES

APRIL 19, 2021

Mr. VAN HOLLEN (for himself and Mr. BLUNT) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

A BILL

To require the Secretary of Commerce to seek to enter into an agreement with the National Academies of Sciences, Engineering, and Medicine to conduct a study on the top 10 emerging science and technology challenges faced by the United States and develop recommendations to address them, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “National Strategy to
3 Ensure American Leadership Act of 2021” or the “Na-
4 tional SEAL Act of 2021”.

5 **SEC. 2. FINDINGS.**

6 Congress makes the following findings:

7 (1) In 1960, the United States was an undis-
8 puted leader in science and innovation, making up
9 69 percent of the world’s research and development
10 investments.

11 (2) The United States innovation system, in-
12 cluding Federal support for research, has spurred
13 development of critical technologies, including the
14 internet, the Global Positioning System (GPS),
15 supercomputing, speech-recognition, semiconductors,
16 and Magnetic Resonance Imaging (MRI).

17 (3) By 2018, as governments and industry in
18 other countries have increased their own investment,
19 the United States share of global research and devel-
20 opment fell to 27.6 percent.

21 (4) In 2015, China launched the Made in China
22 2025 initiative, a 10-year strategic plan that in-
23 cludes promoting development in key sectors, such
24 as next generation information technology, industrial
25 robotics, electric vehicles, new synthetic material de-
26 velopment, and biotechnology.

1 (5) From 2000 to 2018, China's share of global
2 research and development rose from 4.9 percent to
3 26.3 percent and the United States share fell from
4 39.9 percent to 27.6 percent.

5 (6) While the United States continued to fund
6 more research and development than any other individual
7 country, China, as the number 2 funder, was
8 less than \$28,000,000,000 behind United States investment.

10 (7) In 2005, Senator Lamar Alexander and
11 Senator Jeff Bingaman requested that the National
12 Academy of Sciences explore “the top 10 actions, in
13 priority order, that Federal policy makers could take
14 to enhance the science and technology enterprise so
15 the United States can successfully compete, prosper,
16 and be secure in the global community of the 21st
17 Century,” along with an implementation strategy.

18 (8) The subsequent report, “Rising Above the
19 Gathering Storm,” led to passage of the America
20 COMPETES Act (121 Stat. 572; Public Law 110–
21 69) and the America COMPETES Reauthorization
22 Act of 2010 (124 Stat. 3982; Public Law 111–358)
23 to increase investment in scientific research and enhance
24 the science, technology, engineering, and mathematics workforce.

6 (10) The United States is in a period of rapid
7 development of innovation, including disruptive tech-
8 nology like the internet of things, blockchain, auton-
9 omous vehicles, clean energy technology, energy stor-
10 age, artificial intelligence, quantum information
11 science, nanotechnology, and advanced genome edit-
12 ing.

13 (11) The United States is facing resource and
14 national security challenges that will require ad-
15 vanced research and innovation.

16 (12) Advances in research and technology in
17 other countries, like the growth of China in fifth-
18 generation wireless networking technology, have pre-
19 sented national security challenges in United States
20 infrastructure.

1 **SEC. 3. STUDY ON EMERGING SCIENCE AND TECHNOLOGY**

2 **CHALLENGES FACED BY THE UNITED STATES**
3 **AND RECOMMENDATIONS TO ADDRESS**
4 **THEM.**

5 (a) **STUDY.—**

6 (1) **IN GENERAL.**—The Secretary of Commerce
7 shall seek to enter into an agreement with the Na-
8 tional Academies of Sciences, Engineering, and Med-
9 icine to conduct a study—

10 (A) to identify the 10 most critical emerg-
11 ing science and technology challenges facing the
12 United States; and

13 (B) to develop recommendations for legis-
14 lative or administrative action to ensure United
15 States leadership in matters relating to such
16 challenges.

17 (2) **ELEMENTS.**—The study conducted under
18 paragraph (1) shall include identification, review,
19 and evaluation of the following:

20 (A) Matters pertinent to identification of
21 the challenges described in paragraph (1)(A).

22 (B) Matters relating to the findings in sec-
23 tion 2.

24 (C) Matters relating to the recomme-
25 ndations developed under paragraph (1)(B), includ-
26 ing with respect to education and workforce de-

1 development necessary to address each of the
2 challenges identified under paragraph (1)(A).

3 (3) TIMEFRAME.—

4 (A) AGREEMENT.—The Secretary shall
5 seek to enter into the agreement required by
6 paragraph (1) on or before the date that is 60
7 days after the date of the enactment of this
8 Act.

9 (B) FINDINGS.—Under an agreement en-
10 tered into under paragraph (1), the National
11 Academies of Sciences, Engineering, and Medi-
12 cine shall, not later than 1 year after the date
13 on which the Secretary and the National Acad-
14 emies enter into such agreement, transmit to
15 the Secretary the findings of the National
16 Academies with respect to the study conducted
17 pursuant to such agreement.

18 (b) REPORT.—

19 (1) IN GENERAL.—Not later than 30 days after
20 the date on which the Secretary receives the findings
21 of the National Academies of Sciences, Engineering,
22 and Medicine with respect to the study conducted
23 under subsection (a), the Secretary shall submit to
24 Congress a report on such study.

1 (2) CONTENTS.—The report submitted under
2 paragraph (1) shall include the following:

3 (A) The findings of the National Academ-
4 emies of Sciences, Engineering, and Medicine
5 with respect to the study conducted under sub-
6 section (a).

7 (B) The conclusions of the Secretary with
8 respect to such findings.

9 (C) The recommendations developed under
10 subsection (a)(1)(B).

11 (D) Such other recommendations for legis-
12 lative or administrative action as the Secretary
13 may have with respect to such findings and con-
14 clusions.

15 (c) INFORMATION FROM FEDERAL AGENCIES.—

16 (1) IN GENERAL.—The National Academies of
17 Sciences, Engineering, and Medicine may secure di-
18 rectly from a Federal department or agency such in-
19 formation as the National Academies of Sciences,
20 Engineering, and Medicine consider necessary to
21 carry out the study under subsection (a).

22 (2) FURNISHING INFORMATION.—On request of
23 the National Academies of Sciences, Engineering,
24 and Medicine for information, the head of the de-
25 partment or agency shall furnish such information to

1 the National Academies of Sciences, Engineering,
2 and Medicine.

